



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/652,846

08/29/2003

Timothy J. O'Brien

D6020CIP4

5440

7590 12/01/2009  
Benjamin Aaron Adler  
ADLER & ASSOCIATES  
8011 Candle Lane  
Houston, TX 77071

EXAMINER

HUYNH, PHUONG N

ART UNIT

PAPER NUMBER

1644

MAIL DATE

DELIVERY MODE

12/01/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* TIMOTHY J. O'BRIEN, LOWELL J. UNDERWOOD,  
JOHN BEARD, and KAZUSHI SHIGEMASA

---

Appeal 2009-013515  
Application 10/652,846  
Technology Center 1600

---

Decided: December 1, 2009

---

Before DONALD E. ADAMS, FRANCISCO C. PRATS, and  
STEPHEN WALSH, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 52-55, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

### STATEMENT OF THE CASE

The claims are directed to an isolated DNA. Claim 52 is representative:

52. An isolated DNA that differs from nucleic acid sequence of SEQ ID NO: 6 due to inclusion of an intron sequence between exon 2 and exon 3 of SEQ ID NO: 6, said DNA encoding a TADG-14 protein variant with an amino acid sequence shown in SEQ ID NO: 75.

Claims 53-55 depend directly or indirectly from claim 52.

The Examiner relies on the following evidence:

Mitsui et al., *A novel form of human neuropsin, a brain-related serine protease, is generated by alternative splicing and is expressed preferentially in human adult brain*, 260 EUR. J. BIOCHEM. 627-34 (1999).

The rejection presented by the Examiner follows:

Claims 52-55 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Mitsui.

We reverse.

### ISSUE

Have Appellants established that Mitsui does not teach a DNA sequence that differs from SEQ ID NO: 6 due to the inclusion of an intron sequence between exon 2 and exon 3 are required by Appellants' claim 52?

## FINDINGS OF FACT

FF 1. The sequence of Appellants' SEQ ID NO: 6 is reproduced below:

```
ctgtagcagg cagagcttac caagtctctc cgaactcaaa tgggaagaaat accttatgaa 60
tgtaagaatg taggggggtca tggcttgttaa tttacacagt gtaaatgaaa ccatcctaga 120
ggattatgag gaatcccttc tatgtgattt tcaatcatag caagcaagaa aggcctccagt 180
gtcaaggtag ttcagctctt acaggatata aaacagtcca tacttgagag aaaaaactta 240
gatctgagtg atggaatgtg aagcaaatct ttcaaaatca gtagacattt cttggacata 300
aaacacagat gaggaagggg cttcaaatta gaagttagct aatcaccatc agaaagttca 360
tgtttggtaa attctgttac tagaaatgta ggaaattcag gtatagcttt gaatcccaat 420
tacacattgg tcagtgggaa aactaagggc ctccaacagg caaattcagg gaggataggt 480
ttcaggggat gccctggatt ctgggaagacc tcaccatggg acgccccga cctcgtgcgg 540
ccaagacgtg gatgttctctg ctcttgcttg ggggagcctg ggcaggacac tccagggcac 600
aggaggacaa ggtgctgggg ggtcatgagt gccaacccca ttgcagcctt tggcaggcgg 660
ccttggttcca gggccagcaa ctactctgtg gcggtgtcct tgtaggtggc aactgggtcc 720
ttacagctgc ccactgtaaa aaaccgaaat acacagtacg cctgggagac cacagcctac 780
agaataaaga tggcccagag caagaaatac ctgtgtgttc gtccatccca caccctgct 840
acaacagcag cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc 900
aggcatcctt ggggtccaaa gtgaagccca tcagcctggc agatcattgc acccagcctg 960
gccagaagtg caccgtctca ggttggggca ctgtcaccag tccccgagag aattttctctg 1020
acactctcaa ctgtgcagaa gtaaaaatct ttccccagaa gaagtgtgag gatgcttacc 1080
cggggcagat cacagatggc atgggtctgtg caggcagcag caaaggggct gacacgtgcc 1140
agggcgatct tggaggcccc ctgggtgtgtg atgggtgcaat ccagggcac acatcctggg 1200
gctcagacct ctgtgggagg tccgacaaac ctggcgtcta taccaacatc tgccgtacc 1260
tggtactggat caagaagatc ataggcagca agggctgatt ctaggataag cactagatct 1320
cccttaataa actcacaact ctctgaaaaa aaaaaaaaaa 1360
```

(See Appellants' Sequence Listing submitted August 29, 2003.)

FF 2. The Examiner finds that figures 2 and 4A of Mitsui teach a DNA that encodes a protein having the amino acid sequence shown in SEQ ID NO: 75 and includes an intron between exon 2 and exon 3 (Ans. 3).

FF 3. The nucleic acid and amino acid sequences illustrated in Mitsui's Figure 2 are reproduced below:

```
CACTGGGTCGCAATCAATAGCTGACCCGCGCCCTGGATTCGGAAGACCTCAGCATGGAA 60
M G 2
DCCGCGGACCTGCTGGGCGCAAGAGCTGGAAGTCTGCTGCTTCTGCTGGGAGGCTGG 120
R P R P H A A K Y W F L L L L L G G A N
CAATCTGTTGAAGCTGGAGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTG 180
A C C S L D L L T R L Y A E N I P C V
42
CAATTGAAAGCAAGTGGCTTTCTGAAAGCTTCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 240
N L N P G W P S D P S H C P R G W R S N
82
CCTCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 300
P L P P A A S R S R A O S O K Y L G D N
32
GAGTGCACACCCATTCACAGCTTGGGAGGCGGCTTCTGCTGCTGCTGCTGCTGCTGCTGCT 360
S C D P H S Q P W D A A S F R G S G L L
102
TGTGCGGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 420
G G G Y L V R S N W V L T A A R C
122
AAATACACAGTGGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 480
K T I T R L G S H R L Q N K S E P E G E
142
ATACCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 540
I P V V G S T F N P C Y Q S S D Y E D H
162
AACCATGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 600
N N D L M L L D L R G A S L G S E N V N
182
CCATGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 660
P L L A R C G S E T V S S N
202
GCACTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 720
S P V S P R E S P G L I S E A E V K
222
ATCTTCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 780
I P S K K C E D A V S G D I T D G M V
242
TGTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 840
C A C G S K N G A C S S G S G L V
262
TGTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 900
C S G A L D G I T S M G E D P C D R S D
282
AAATCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 960
K P G S Y F N I C R Y L D N I K X I S
302
AGCAAGGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 1020
S Z G
322
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 1040
```

Mitsui's Fig. 2 illustrates "[t]he nucleotide and amino acid sequences of human neuropsin" (Mitsui 628: col. 2, Fig. 2 and Fig. 2 legend).

FF 4. The nucleic acid and amino acid sequences illustrated in Mitsui's Figure 4A are reproduced below:

```

CCTGGATGTTCTTCTCTCTCTGCTGGGGGAGCCTTGGCCAGTTAGGAGGGTTCGGGAGGCC 50
M M F L L L L G G A W A S = Type1
A = Type2

TCCGGAGGGAAGGATCTGAAGGCAGCACTGCGCCTGGGGAGTCTGTGGAAATGCCCGGG 120
GGTTATGTGGGTGCTGTGTCACGGATGTGAAGAGTGCATACGGTGCAGGAGCCTCTGTG 180
GGCTTCTCTAGGGTGGACAGAGGCAAGAAACAGGTAGCAGCAGGTAGGAGTAGGTTCGG 240
TGATGCTGTAAATTGTCTGAATAGCTACAGCCTTTGGGGCTGCTTGTCTGGGGCATAG 300
ATTACCTTGGGATACACGGGGCTGTAGACTCATGTGGAAGCATGTGGGGCATTCCTG 360
GGTGTGTGACTCTTGTATGATGACACATGGACTGAAATGAGTGTCCCGTGTGGCAGGT 420
C
CTGGAGGCTTGGACCTCTCTCACTAAGTGTATGCGGAGAACCTTGGCTGTGTCTCTTTGA 480
G S L S L L L T K L Y A E H L P C V H L N
ACCCACAGTGGCTTCCAGCCCTGCGACTGCGGAGAGGGTGGGATCCAAAGCTCTTCC 540
P G M R S G P S H C P R G M H S H P L P
CTCTCTGTGGTGGCACTCCAGGGCAGGAGGAGCAAGCTCTGGGGCTCATGAGTCC 600
P A A G H S R A Q E D K V L G S H E C S
AACCCATTTGGAGCTTGGCAGGGGCTTGTTCAGGGCCAGCACTACTSTTGGGG 660
P H S S P M G A A L F G S G G L L C G S
GTGTCTTGTAGGTGCAACTGGGTCTTACAGCTGCGGCTGTAAAAACCTTGAGTGG 720
V L V G G N M V L Y A A H C K K P
ATGATGGGGCAGAGGTCACTGGGGCTTAAAGAAAGAGGGGCTGGGGTTTCGACTCAG 780
GAAGGAGAGAGCTGAGGACTGGACTTCTGGCTGTGAAGGAGGAGGGGCTGGGGCAATA 840
CCCTGTCTGGGTGGCAAGTATCCCGACATTTACAGCAATACAGGTAGGCTTGGAG 900
K Y Y Y H L S D
ACACAGCTTACAGAAATAGAGATGGCCAGAGCAAGAAATACCTGT 940
H S L G N X G G P E G E I F

```

Mitsui's Fig. 4 illustrates nucleotide and amino acid sequences human neuropsin, wherein "[t]he exons and deduced amino acid sequences are boxed. 5' and 3' consensus dinucleotides of [the] intron [are] . . . double-underlined" and "[t]he 3' splice site of human type 1 neuropsin [is] . . . indicated by an arrow" (Mitsui 630: col. 1, Fig. 4A and Fig. 4A legend).

## PRINCIPLES OF LAW

On appeal to this Board, Appellants must show that the Examiner has not sustained the required burden of demonstrating unpatentability. *See Ex*

*parte Yamaguchi*, 88 USPQ2d 1606, 1608 and 1614 (BPAI 2008) (precedential).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

### ANALYSIS

Claim 52 is drawn to an isolated DNA. The claimed DNA encodes a TADG-14 protein variant with an amino acid sequence shown in SEQ ID NO: 75 (Claim 52).

We are not persuaded by the Examiner’s assertion that Appellants’ “claim 52 recites an isolated DNA that *differs* from nucleic acid sequence of SEQ ID NO: 6, not an isolated DNA sequence comprising the nucleotide sequence as set forth in SEQ ID NO: 6” (Ans. 4). Claim 52 requires the claimed DNA to differ from the nucleic acid sequence of SEQ ID NO: 6 *only* by (i.e., “due to”) including an intron sequence between exon 2 and exon 3 of SEQ ID NO: 6 (Claim 52).

While claim 52 does not require the intron to have a specific sequence, claim 52 does require the presence of all the nucleotides present in SEQ ID NO: 6 arranged in the same order, but for the inclusion of an intron between exon 2 and exon 3 (Claim 52).

SEQ ID NO: 6 has a defined arrangement of nucleotides (*see* FF 1). The claim requires that the arrangement of nucleotides set forth in SEQ ID NO: 6 be modified only by the inclusion of an intron sequence between exon 2 and exon 3. The Examiner has not identified, and we do not find, a

teaching in Mitsui of a sequence that differs from the sequence set forth in SEQ ID NO: 6 only by the inclusion of an intron sequence between exon 2 and exon 3 (*see also* App. Br. 9 (Mitsui does “not teach the DNA sequence that differs from SEQ ID NO:6 due to the inclusion of an intron sequence between exon 2 and exon 3 as recited in Applicants’ claim 52”)).

We recognize the Examiner’s assertion that “the nucleic acid sequence of Mitsui encodes a protein with an amino acid sequence 100% identical to the claimed sequence shown in [Appellants’] SEQ ID NO: 75” (Ans. 4). While this may be true, the claim is not directed to an amino acid sequence, but instead is drawn to a specific nucleotide sequence (Claim 52).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d at 631. Accordingly, the Examiner had the burden of establishing that Mitsui’s nucleotide sequence is the same as Appellants’ claimed DNA. The Examiner has not met this burden on this record.

#### CONCLUSION OF LAW

Appellants have established that Mitsui does not teach a DNA sequence that differs from SEQ ID NO: 6 due to the inclusion of an intron sequence between exon 2 and exon 3 are required by Appellants’ claim 52. The rejection of claims 52-55 under 35 U.S.C. § 102(b) as being anticipated by Mitsui is reversed.

REVERSED

Appeal 2009-013515  
Application10/652,846

cdc

BENJAMIN AARON ADLER  
ADLER & ASSOCIATES  
8011 CANDLE LANE  
HOUSTON TX 77071